

FORM PTO-1390 (Modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE (REV 10-95)		ATTORNEY'S DOCKET NUMBER <b>2012</b>
<b>TRANSMITTAL LETTER TO THE UNITED STATES</b> <b>DESIGNATED/ELECTED OFFICE (DO/EO/US)</b> <b>CONCERNING A FILING UNDER 35 U.S.C. 371</b>		U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR <div style="font-size: 1.5em; font-weight: bold; text-align: center;">10/070487</div>
INTERNATIONAL APPLICATION NO. <b>PCT/DE 00/02192</b>	INTERNATIONAL FILING DATE <b>JUNE 29, 2000</b>	PRIORITY DATE CLAIMED <b>SEPTEMBER 4, 1999</b>
TITLE OF INVENTION <b>ELECTRONIC DATA PROCESSING SYSTEM FOR OPERATIONS MANAGEMENT</b>		
APPLICANT(S) FOR DO/EO/US <b>Peter SCHIMITZEK</b>		
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information: <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).</li> <li>4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.</li> <li>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371 (c) (2))             <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).</li> <li>b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ol> </li> <li>6. <input checked="" type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).</li> <li>7. <input type="checkbox"/> A copy of the International Search Report (PCT/ISA/210).</li> <li>8. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))             <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau).</li> <li>b. <input type="checkbox"/> have been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input type="checkbox"/> have not been made and will not be made.</li> </ol> </li> <li>9. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li> <li>10. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).</li> <li>11. <input type="checkbox"/> A copy of the International Preliminary Examination Report (PCT/IPEA/409).</li> <li>12. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).</li> </ol> <p><b>Items 13 to 18 below concern document(s) or information included:</b></p> <ol style="list-style-type: none"> <li>13. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li> <li>14. <input checked="" type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</li> <li>15. <input checked="" type="checkbox"/> A <b>FIRST</b> preliminary amendment.                    A <b>SECOND</b> or <b>SUBSEQUENT</b> preliminary amendment.</li> <li>16. <input type="checkbox"/> A substitute specification.</li> <li>17. <input type="checkbox"/> A change of power of attorney and/or address letter.</li> <li>18. <input checked="" type="checkbox"/> Certificate of Mailing by Express Mail</li> <li>19. <input type="checkbox"/> Other items or information:</li> </ol> <div style="border: 1px solid black; height: 100px; margin-top: 10px; display: flex; align-items: center; justify-content: center; font-size: 2em; font-family: cursive;">             ET 796 689 303 US           </div>		

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR <b>10/070487</b>	INTERNATIONAL APPLICATION NO. <b>PCT/DE 00/02192</b>	ATTORNEY'S DOCKET NUMBER <b>2012</b>
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20. The following fees are submitted:

**BASIC NATIONAL FEE ( 37 CFR 1.492 (a) (1) - (5) ) :**

- |  |                   |
|--|-------------------|
| <input type="checkbox"/> Search Report has been prepared by the EPO or JPO .....   | <b>\$930.00</b>   |
| <input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) .....  | <b>\$720.00</b>   |
| <input type="checkbox"/> No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) .....   | <b>\$790.00</b>   |
| <input checked="" type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... | <b>\$1,070.00</b> |
| <input type="checkbox"/> International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) .....         | <b>\$98.00</b>    |

**ENTER APPROPRIATE BASIC FEE AMOUNT =****\$890.00**

Surcharge of **\$130.00** for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492 (e)).

**\$0.00**

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	15 - 20 =	0	x \$18.00	<b>\$0.00</b>	
Independent claims	1 - 3 =	0	x \$80.00	<b>\$0.00</b>	

Multiple Dependent Claims (check if applicable). ☐**\$0.00****TOTAL OF ABOVE CALCULATIONS =****\$890.00**Reduction of 1/2 for filing by small entity, if applicable. Verified Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28) (check if applicable). ☒**\$445.00****SUBTOTAL =****\$445.00**Processing fee of **\$130.00** for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492 (f)).**\$0.00****TOTAL NATIONAL FEE =****\$445.00**Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable). ☒**\$40.00****TOTAL FEES ENCLOSED =****\$485.00**

Amount to be:	
refunded	\$
charged	\$

☐ A check in the amount of \_\_\_\_\_ to cover the above fees is enclosed.

☒ Please charge my Deposit Account No. **19-4675** in the amount of **\$485.00** to cover the above fees.  
A duplicate copy of this sheet is enclosed.

☒ The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. **19-4675** A duplicate copy of this sheet is enclosed.

**NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.**

SEND ALL CORRESPONDENCE TO:

**STRIKER, STRIKER & STENBY**  
**103 EAST NECK ROAD**  
**HUNTINGTON, NEW YORK 11743**

SIGNATURE

**MICHAEL J. STRIKER**

NAME

**27233**

REGISTRATION NUMBER

**MARCH 4, 2002**

DATE

UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner:                      Group:                      Attorney Docket # 2012

Applicant(s) : SCHIMITZEK, P.

Serial No. :

Filed :

For : ELECTRONIC DATA PROCESSING SYSTEM FOR  
OPERATION MANAGEMENT

SIMULTANEOUS AMENDMENT

March 4, 2002

Honorable Commissioner of Patents and Trademarks  
Washington, D.C. 20231

S I R S:

Simultaneously with filing of the above identified application  
please amend the same as follows:

In the Claims:

Cancel all claims without prejudice.

Substitute the claims attached hereto.

REMARKS:

This Amendment is submitted simultaneously with filing of the above identified  
application.

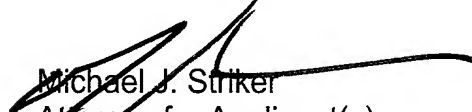
With the present Amendment applicant has amended the claims so as to eliminate  
their multiple dependency.

10/070487

JC13 Rec'd PCT/PTO 04 MAR 2002

Consideration and allowance of the present application is most respectfully requested.

Respectfully submitted,

  
Michael J. Striker  
Attorney for Applicant(s)  
Reg. No. 27233

10/070487

## Claims

1. An electronic data processing system for operations management in which the entire management process is integrated into the electronic data processing system, which is comprised of

- the computer system (24),
  - an intelligent control system (25),
  - a goods production process/goods management process (16), and
  - a basic integration system (22), which is associated with the computer system (24)
- and is connected by means of a connection (a) to the intelligent control system (25) and to the goods production process/goods management process (16) via a special interface (21), and which is comprised of a management software application (31) and a software (23), which safeguards the association of a base element (9) with individual businesses/business units (18), where the computer system (24) and the intelligent control system (25) have access to real-time data regarding the goods production process/goods management process (16), which data are directly present in the computer system (24) and exist in the form of data records in the intelligent control system (25) by means of the connection (a), which data records are converted into signals and vice versa, are converted from signals into data records, which, with instructions for the goods production process/goods management process (16) are executed by it with a software by means of the computer (26), by means of a software layer (27), and by means of a connecting element (28), where the software layer (27) and the connecting element (28) with the internal software can be an integrated component of the computer system (24), and that the intelligent control system (25), by means of the computer (26), the software layer (27), and the connecting element (28), is operationally connected to the basic integration system (22), and the specific integration element (20) is operationally connected to the individual business/business unit (18) by means of the data connections (19) in such a way that the performance potential (1) of the individual business/business unit (18) is identified by means of elementary factors (2), exists in the form of a data record in the intelligent control system (25), and – for the profit-oriented and process-

oriented management of the goods production process/goods management process (16), which is determined by the elementary factors (2) of manpower (3), production facilities (4), materials (5), and accessible, available information (6), and whose combination capacity is influenced by an optional factor (7) and an integration (8) – makes a selection from among instructions for positively influencing the goods production process/goods management process (16) and this controls the goods production process/goods management process (16) by means of data records according to the previously mentioned data flow and operational connections.

2. An electronic data processing system for operations management according to claim 1, characterized in that the electronic data processing system, which is incorporated company-wide, is networked by means of data connections (19).

3. An electronic data processing system for operations management according to claim 1 [and claim 2], characterized in that through an electronic data processing-based integration of complex, heterogeneous individual businesses/business units (18) by means of specific interfaces (21), an integration of the communication and the standard software for presentation/interaction (29) by means of specific interfaces into the managerial software application (31), an online and real-time detection of managerial parameters takes place by means of operational data collection units, and by means of interfaces (34), (36), these parameters are organized as data, are stored and maintained in internal and external databases (35), (37), are handled by means of processes (13) of implemented business models, and are used as results to control the goods production process/goods management process (16).

4. An electronic data processing system for operations management according to claim 1 [to claim 3], characterized in that the business model takes an integration (8) into consideration as an additional elementary factor (2).

5 5. An electronic data processing system for operations management according to claim 1 [to claim 4], characterized in that the managerial, heterogeneous individual businesses/business units (18) are each represented in an information technology-based manner as base elements (9) through information technology by means of their logical model of integration (8).

10 6. An electronic data processing system for operations management according to claim 1 [to claim 5], characterized in that company-wide, the base elements (9) are uniformly limited to a minimal number of elements, as a result of which the base elements (9) assure a nonredundant graphic representation of the managerial parameters of the integration (8) of the goods production process/goods management process (16) in the respective business units (18).

15 7. An electronic data processing system for operations management according to claim 1 [to claim 6], characterized in that company-wide, the number of processes (13) of the implemented business models is uniformly reduced to the elementary, fundamental processes among and within the elements of the base elements (9), which assures a minimal number of nonredundant processes (13).

20 8. An electronic data processing system for operations management according to claim 1 [to claim 7], characterized in that company-wide, the specific interfaces I, II, III, IV, V, VI, VII (30), (32), (34), (36), (38), (41), (43) of the electronic data processing system are uniformly constituted by a system-independent modular shell structure.

25 9. An electronic data processing system for operations management according to claim 1 [to claim 8], characterized in that the base element (9) contains precisely four elements, where:

- the addresses (10) give a uniform, company-wide graphic representation of all internal and external, legal and natural persons and entities
- 30 • the articles (11) do so for all material assets,

- the conditions (12) do so for all parameters affecting price determination, and
- the processes (13) do so for all possible connections among and within the elements.

10. An electronic data processing system for operations management according to  
5 claim 9, characterized in that the addresses (10) element uniformly includes:  
representatives, suppliers, clients, divisions, personnel, branches, headquarters, ....

11. An electronic data processing system for operations management according to  
claim 9, characterized in that articles (11) element uniformly includes: materials,  
10 operating materials, auxiliary materials, merchandise, retail articles, intermediate goods,  
equipment, ....

12. An electronic data processing system for operations management according to  
claim 9, characterized in that the conditions (12) element uniformly includes: prices,  
15 discounts, surcharges, calculatory costs, rebates, ....

13. An electronic data processing system for operations management according to  
claim 9, characterized in that the element processes (13) uniformly includes the  
managerial interactions within the addresses (10) (e.g. client A and representative B),  
20 within the articles (11) (e.g. formulas), within the conditions (12) (e.g. priority in the  
condition calculations), between addresses (10) and articles (11) (e.g. customer orders),  
between addresses (10) and conditions (12) (e.g. bonuses), and between articles (11) and  
conditions (12) (e.g. volume discounts).

14. An electronic data processing system for operations management according to  
25 claim 9, characterized in that for connection between a first and a second interface layer,  
the individual modules of the shell structure of the interfaces I, II, III, IV, V, VI, VII (30),  
(32), (34), (36), (38), (41), (43) each have two interface layer-specific components, which  
are connected via an internal interface layer that is uniform company-wide, as a result of



which in a required adaptation of a module of the interface to a changed interface layer, only one component has to be adapted.

15. An electronic data processing system for operations management according to claim 9, characterized in that a control message manager (40) as a separate layer encompasses the presentation/interaction (29), the application (31), the data management system (33), the high-level application interface (39), and the interfaces I, II, III, IV, V, VI, VII (30), (32), (34), (36), (38), (41), and (43), and this control message manager (40) receives messages from the various modules and interfaces and forwards each of them to the addressed module, which correspondingly processes the message.

FIVE PAGES OF DRAWINGS ATTACHED!

## Claims

1. An electronic data processing system for operations management in which the entire management process is integrated into the electronic data processing system, which is comprised of

- the computer system (24),
  - an intelligent control system (25),
  - a goods production process/goods management process (16), and
  - a basic integration system (22), which is associated with the computer system (24)
- and is connected by means of a connection (a) to the intelligent control system (25) and to the goods production process/goods management process (16) via a special interface (21), and which is comprised of a management software application (31) and a software (23), which safeguards the association of a base element (9) with individual businesses/business units (18), where the computer system (24) and the intelligent control system (25) have access to real-time data regarding the goods production process/goods management process (16), which data are directly present in the computer system (24) and exist in the form of data records in the intelligent control system (25) by means of the connection (a), which data records are converted into signals and vice versa, are converted from signals into data records, which, with instructions for the goods production process/goods management process (16) are executed by it with a software by means of the computer (26), by means of a software layer (27), and by means of a connecting element (28), where the software layer (27) and the connecting element (28) with the internal software can be an integrated component of the computer system (24), and that the intelligent control system (25), by means of the computer (26), the software layer (27), and the connecting element (28), is operationally connected to the basic integration system (22), and the specific integration element (20) is operationally connected to the individual business/business unit (18) by means of the data connections (19) in such a way that the performance potential (1) of the individual business/business unit (18) is identified by means of elementary factors (2), exists in the form of a data record in the intelligent control system (25), and – for the profit-oriented and process-

oriented management of the goods production process/goods management process (16), which is determined by the elementary factors (2) of manpower (3), production facilities (4), materials (5), and accessible, available information (6), and whose combination capacity is influenced by an optional factor (7) and an integration (8) – makes a selection  
5 from among instructions for positively influencing the goods production process/goods management process (16) and this controls the goods production process/goods management process (16) by means of data records according to the previously mentioned data flow and operational connections.

10 2. An electronic data processing system for operations management according to claim 1, characterized in that the electronic data processing system, which is incorporated company-wide, is networked by means of data connections (19).

15 3. An electronic data processing system for operations management according to claim 1, characterized in that through an electronic data processing-based integration of complex, heterogeneous individual businesses/business units (18) by means of specific interfaces (21), an integration of the communication and the standard software for presentation/interaction (29) by means of specific interfaces into the managerial software application (31), an online and real-time detection of managerial parameters takes place  
20 by means of operational data collection units, and by means of interfaces (34), (36), these parameters are organized as data, are stored and maintained in internal and external databases (35), (37), are handled by means of processes (13) of implemented business models, and are used as results to control the goods production process/goods management process (16).

25 4. An electronic data processing system for operations management according to claim 1, characterized in that the business model takes an integration (8) into consideration as an additional elementary factor (2).

5 5. An electronic data processing system for operations management according to claim 1, characterized in that the managerial, heterogeneous individual businesses/business units (18) are each represented in an information technology-based manner as base elements (9) through information technology by means of their logical model of integration (8).

10 6. An electronic data processing system for operations management according to claim 1, characterized in that company-wide, the base elements (9) are uniformly limited to a minimal number of elements, as a result of which the base elements (9) assure a nonredundant graphic representation of the managerial parameters of the integration (8) of the goods production process/goods management process (16) in the respective business units (18).

15 7. An electronic data processing system for operations management according to claim 1, characterized in that company-wide, the number of processes (13) of the implemented business models is uniformly reduced to the elementary, fundamental processes among and within the elements of the base elements (9), which assures a minimal number of nonredundant processes (13).

20 8. An electronic data processing system for operations management according to claim 1, characterized in that company-wide, the specific interfaces I, II, III, IV, V, VI, VII (30), (32), (34), (36), (38), (41), (43) of the electronic data processing system are uniformly constituted by a system-independent modular shell structure.

25 9. An electronic data processing system for operations management according to claim 1, characterized in that the base element (9) contains precisely four elements, where:

- the addresses (10) give a uniform, company-wide graphic representation of all internal and external, legal and natural persons and entities
- 30 • the articles (11) do so for all material assets,

- the conditions (12) do so for all parameters affecting price determination, and
- the processes (13) do so for all possible connections among and within the elements.

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claim 9, characterized in that the element processes (13) uniformly includes the  
managerial interactions within the addresses (10) (e.g. client A and representative B),  
20 within the articles (11) (e.g. formulas), within the conditions (12) (e.g. priority in the  
condition calculations), between addresses (10) and articles (11) (e.g. customer orders),  
between addresses (10) and conditions (12) (e.g. bonuses), and between articles (11) and  
conditions (12) (e.g. volume discounts).

14. An electronic data processing system for operations management according to  
25 claim 9, characterized in that for connection between a first and a second interface layer,  
the individual modules of the shell structure of the interfaces I, II, III, IV, V, VI, VII (30),  
(32), (34), (36), (38), (41), (43) each have two interface layer-specific components, which  
are connected via an internal interface layer that is uniform company-wide, as a result of

which in a required adaptation of a module of the interface to a changed interface layer, only one component has to be adapted.

15. An electronic data processing system for operations management according to claim 9, characterized in that a control message manager (40) as a separate layer encompasses the presentation/interaction (29), the application (31), the data management system (33), the high-level application interface (39), and the interfaces I, II, III, IV, V, VI, VII (30), (32), (34), (36), (38), (41), and (43), and this control message manager (40) receives messages from the various modules and interfaces and forwards each of them to the addressed module, which correspondingly processes the message.

FIVE PAGES OF DRAWINGS ATTACHED!

VERIFICATION OF TRANSLATION

I, DAVID CLAYBERG

of 948 15<sup>th</sup> St., Ste. 4  
Santa Monica, CA 90403-3134

declare that I am a certified translator well acquainted with both the German and English languages, and that the attached is an accurate translation, to the best of my knowledge and ability, of the attached German-language document.

Signature



David Clayberg

Date March 4, 2002

20040304 10:00:00

## Electronic Data Processing System for Operations Management

## Prior Art

5           The invention relates to an electronic data processing system for operations management, which can be used to integrate managerial, heterogeneous parameter detection units of parameters, which are required for goods production and goods management, to control the goods production and goods management in all individual businesses and business entities.

10           It is generally known that electronic data processing systems are used for operations management, for informing the management, for analysis, or in the form of an expert system.

15           EP 0 209 907 A2 has disclosed an embodiment in which the various managerial and administrative functions in a large enterprise are executed by different, already existing individual systems. In this case, each individual system – as a function of its history – is configured autonomously, with its own formats, parameters, definitions, inputs, etc.. There are hardly any interfaces between the systems so that the individual  
20           systems cannot easily communicate with each other except by means of a human operator or a special adaptation program. With this embodiment, the various independently executed types of management and administration are combined with one another and the inputting of data, the storage, and the additional processing of the input data are improved. The disadvantage of this embodiment lies in the fact that it does not generate a  
25           graphic representation of the production process or parts thereof. Influence on and control of the production process occurs solely by means of verbal or numerical manual inputs. The communication takes place off line as needed (temporary storage) and not in real time. No central control is executed by the management, but rather a de-centralized



5

US 5251294 describes a type of information system, which on the basis of a computer, accesses various addressable and identified contents of a database. In a manner similar to that of an expert system, the databases are ordered by content. In an expert system, however, the entire database is subject to a large number of regulations, which has an unfavorable effect on the search time. The inventive feature disclosed is the inclusion of the idea of the user regarding the search field to be queried. In this connection, only the respective partial quantity of hierarchically arranged contents, which has already been formed by the previously evaluated superior hierarchical plane or has been formed through combinations with other partial quantities, is administered. Since the data have already been identified, it is always possible to immediately access the content of the selected quantity. As a result, the predicted content displayed is determined by the solution path of the user (the chronology of the selection). This chronology of the solution path is depicted in the form of logic trees. Complex and largely unstructured problems are specified as a user field and the management process is cited by way of example. In this embodiment, no graphic representation of the production process is generated, but instead a selective choice is made from a large knowledge base of an indexed database. There is no graphic representation of the goods production process or goods management process as a whole, reaching as far as control or influence. The

existing results do not have any repercussions on the control loop of the enterprise.

DE 4431131 describes a "technical organizational system tool". It is comprised of a control system with data or information for networked units, in particular trade organizations. Through the formation of a control loop by means of this "system tool", the participants in this trade organization are encouraged onto the path of organizing themselves. The goal is to control a complex production process by means of the participants in this control system. There is one embodiment as a computer program connected to specialized hardware. In terms of software, components provided with a classification are prepared by means of proprietary software and the subprocesses are weighted with multipliers. The various control loops constitute a vertical hierarchy. The required data are collected by means of operational data collection systems and the communication is integrated into the system. The control system functions based on process measurement, error measurement, and capacity measurement with parameters. A graphic representation is produced of the results-oriented management in a process-oriented management in the group process, where the criterion includes a spiral of continuous improvement. To that end, process-oriented functional units are concatenated with one another. The self-organization is constituted by a self-adapting regulation of the subprocesses of the management process. The disadvantage of this embodiment is that the data, which forms the basis of this managerial control loop, cannot be collected in a nonredundant and therefore reliable fashion and thus cannot be supplied to the electronic data processing system online and in real time.

The object of the invention is to develop an electronic data processing system for operations management, which produces a nonredundant graphic representation of the

managerial facts, situations, and processes in the individual businesses and business units, and which safeguards and controls the electronic data processing-based connection of all units used for the production of goods by integrating the communications engineering, where the operations data are processed and handled directly online and in real time by means of operational data collection workstations.

The object of the invention is attained according to the invention by means of the features disclosed in claim 1. Preferred modifications of the invention ensue from the dependent claims.

The advantages of the invention are

- that operational data are processed and handled directly online and in real time by means of operational data collection workstations,
- that the electronic data processing-based connection of all units used for production are integrated into the all-encompassing business information system by means of interfaces and special interface programs and the units used for production are controlled by means of these,
- that the internal and external communication takes place through symbiosis of the electronic data processing system, telephone system, and Internet in an electronic data processing-supported way by means of an integration mechanism. Beyond the "pure" software, the structure of the "integration" is consequently also formulated in the integration of the production and communications technology as a "postulate" of an inclusive "integration" and is transformed in this system,
- that the individual relationships of the performance potential of the enterprise are graphically represented properly in an information technology-based manner by means of the element of the integration and are used to control the goods production and goods management,
- that the information technology functions as a "transmission mechanism" on the coordination procedure between the production end and the consumption end,

- that the integration element in the above-mentioned coordination procedure functions as an identification criterion over all management processes between the production end and the consumption end,
- that the software generates a graphic representation of the data system of the goods production and goods management of the enterprise,
- that there is a continual improvement in the process of the coordination procedures between the market participants and the business units that extends to the execution plane in the process of the goods production and marketing,
- that the integrated software allocates the expenses accompanying the production to the cost center in real time and online and thus the "actual costs" of the individual goods are transparently displayed at all times,
- that the cooperating factor combinations required in the goods production process are graphically represented from a process engineering standpoint and from an accounting standpoint,
- that the outputs flowing into the goods production can be determined in real time by the information technology system and can be delimited in the output process from division to division.
- that the existing results of the evaluation have repercussions on the management control loop.

The essence of the invention is characterized in that there is an electronic data processing-supported process for operations management in which the entire management process is integrated into the electronic data processing system and consequently, this integration itself becomes an elementary factor in the production. Through this operational approach as a prerequisite for the embodiment, a successful strategy has proven to be to correspondingly adapt a business model in such a way that in the technical program-based embodiment, in general, a graphic representation of the management process in all business units can be generated in the electronic data processing system by means of the base element according to the invention and in a manner that is suitable

from a technical and information technology standpoint. The exceptional feature lies in this method for generating a graphic representation of the general management process in an operations management software, which method is especially suited for electronic data processing, and this exceptional feature is embodied in particular by the base element.

- 5 This software application generates a graphic representation of an entire enterprise in a nonredundant fashion and in real time by means of a number of base elements, which correspond to the business units, supplies these data to other units, makes the enterprise transparent for a nonhuman controller, and prepares further analyses, executes control functions, which are themselves programmed as processes, independently evaluates
- 10 individual processes according to defined criteria, and induces to corresponding reactions. This information technology-based graphic representation of the management processes of an enterprise by means of electronic data processing is generated by the software application without the intervention of human intelligence, but rather through the use of controllable natural forces in the form of the procedures inherent to the system, as are the
- 15 process evaluation and the programmed control process. This embodiment achieves a technical and information technology-based process independent of the concretely existing, programmed embodiment as a program cord.

The invention will be explained below through the use of exemplary

20 embodiments.

Fig. 1 shows the production factors and their goal-directed combination for an existing demand on the commodities- and factor market.

Fig. 2 shows the connection of operational data as elements of the integration.

Fig. 3 shows the integration, combination, and evaluation of the factors of

25 management for goods production.

Fig. 4 is a schematic representation of the electronic data processing system for operations management.

Fig. 5 shows the technical embodiment of an electronic data processing system for operations management.

The development of an electronic data processing system for operations management that is used to integrate managerial, heterogeneous parameter detection units of parameters, which are required for the goods production, and for controlling goods production, based on the management control loop, which contains the production end and consumption end as starting points. The division of business areas into production and consumption is viewed in terms of the regulated, functioning financial management. The production (preparation of products and services) is executed by the individual businesses and business units (companies, public corporations, etc.). The consumption (consumption of products and services) is associated with private households. The exchange of products and services between the private households and the remaining individual businesses and business units takes place by means of the factor and commodities market. The evaluation of goods (products and services) (provided there is a regulated monetary system) is executed based on supply and demand. The “integrated” factor combination represents the performance potential of the individual businesses and business units. The integration elements of the factor “integration” permit information technology-based support of the factor combinations and the graphic representation of all management processes by means of the operations management software. The managerial facts, situations, and procedures in the individual businesses and business units are consequently graphically represented in a nonredundant fashion by means of the software with the aid of the electronic data processing system.

Goods and services are produced in the enterprises a known manner based on the goal-directed combination of production factors for an existing demand on the commodities and factor market, where, as shown in Fig. 1, the performance potential 1 that is effective in the enterprise is comprised of the elementary factors 2 of management, human operator 3, production facilities 4 (offered by the individual businesses and business units), materials 5 (offered by the by the individual businesses and business units), and accessible, available information (6) as a type of knowledge. The term

materials 5 encompasses all goods (semi-manufactured products, primary products, auxiliary materials) that flow as variable resources into the goods production. The performance potential 1 of the individual businesses comes into play through the combination capacity of the elementary factors 2 (human operator 3, production facilities 4, materials 5, and accessible, available information 6) by means of an optional factor 7, which is organized and generated in each individual business. The combination of factors, as the output potential 1 of the enterprise, takes place in the business units referred to as “functional areas”. The organization of the functions associated with these functional areas here is oriented by the predetermined process of the combinations of the facts in the various branches. An indispensable requirement for the successful organization of the internal and external management procedures in the goal-directed operation in goods production and for safeguarding services is the integration of the functional areas and functions in the enterprise. First, the integration standardizes the procedures in the process of the combination of the factors (as repeatable operating sequences) by means of the “transmission effect” of the software and can therefore be “reliably” repeated. The necessary hardware, which is required in order to use the software is allocated to the elementary factor 2, production facilities 4. The integration of the information technology system over all functional areas and functions requires that the organization into functional areas must correspond to the requirement for universal validity. In this connection, it should be noted that the individual company branches differ in terms of their weighting in the combinations of the factors, but can nevertheless be graphically represented in the same functional area diagram. In order to produce a software of the basic integration system for operations management, which is independent of the branch and at the same time specific to the branch, for the graphic representation of the operational execution process, it follows that in addition to the elementary factors 2, which are comprised of manpower 3, production facilities 4, material 5, accessible, available information 6, and the optional factor 7, there is also a factor integration 8, which is used for the detection, identification, and determination of wear and tear, as well as the definition of the employment of manpower 3, operating funds 4, materials 5, and

the accessible, available information 6 in the production. The effectiveness of the combination of factors essentially depends on the optional factor 7 and the achieved degree of integration of the functional areas and functions.

5           The factor of integration 8 at play in the functional areas acts by means of a base element 9, as shown in Fig. 2. The base element 9 or forces of integration subsume the smallest units of common data, facts, and procedures, the sum of which yields a "whole". The structure of the base element 8 is oriented toward the requirement of reducing all situations and procedures of managerial activity to the "smallest components", which at  
10           the same time are also subsumption elements (in a total quantity). If the structure of the enterprise has been reduced to the no longer differentiable data and facts, then every conceivable combination in the course of all managerial procedures can be graphically represented and can be recombined into an unlimited array of different units of technical and managerial situations, procedures, and organizational structures. It is thus assured  
15           that these "smallest elements" of operational data (facts, situations, etc.) are simultaneously elements of the factor integration 8 and constitute the base element 9, which is comprised of at least two of the elements addresses 10, articles 11, conditions, and processes 13, where the characteristic features of the addresses 10, articles 11, conditions 12, and processes 13 can be interchanged with one another.

20           The suitable information and communications techniques, which are used to control the managerial procedures and the production procedures, are in a position to graphically represent and process these complex interrelationships.

For example, the characteristic features of the elements are executed as follows:

25   Address 10:

All market participants are clearly identified by the address 10. In information technology, this concept of "identifying" all persons, legal entities, etc. permits all managerial procedures to be coordinated. The factor of manpower 3 is likewise detected directly by means of the address 10. The address 10 indicates all market participants



(supplier, client, etc.), divisions, departments, etc. on down to employee. Consequently all location- and name-related information in the form of data, speech, and images can be processed, stored, and accessed centrally and nonredundantly in a single location for the information and communications system.

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#### Articles 11:

All managerial activity is directed toward goods (products and services). These goods (even public goods) must be clearly identified in the information system; this procedure is referred to as article identification. The term article 11 is used to identify all production facilities 4 (including land and capital) as well as materials 5 and accessible, available information 6, where the output (task, operating sequence, scheduling, etc.) that goes into the production process is also registered by the articles 11. Even the human workforce 3, whose work is a factor and is provided as a service, is registered and processed by the article identification 11. Consequently, all products to be registered as goods in the production process or in sales (even semi-manufactured products and auxiliary materials, etc.) and also services, which are goals of the managerial activity and of the cost- and performance calculation, are registered with the article 11. The time to be allocated or the overhead costs etc. to be distributed by means of "distribution formulas" are also, under this definition, to be processed under the identification of the "article number logic" in the article 11. With the exception of the optional factor 7, all performance factors are registered by the article identification 11 and consequently made recognizable or registerable by the information system.

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#### Conditions 12:

The influences on the articles 11 are referred to here as conditions 12. These include the physical quantities in a wide range of units and the qualitative influences on the articles 11. By means of parameterizable "formulas" (as computationally comprehensible situations) the influences are associated with the articles 11 as needed, as influence factors. As a result, the physical and qualitative effects on the articles 11 can be

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calculated and consequently are accessible to the information system. The particular “addressing conditions”, which result from the combination of articles 11 and addresses 10, are likewise registered by means of conditions 12 and are taken into account in all procedures which relate to these combinations, so even the evaluation of the power consumption in the operating sequences, tasks, or actions. The same is true of conditions 12 that apply to particular processes or for concatenations (from address 10 => article 11 => process 13) and the “special conditions” to be particularly noted here. Based on the elements of the integration 10 to 11, any number of situations can be represented, which out a multitude of theoretically conceivable concatenations, have validity with regard to “special conditions”, and can consequently be clearly established in the programs.

#### Process 13

The description of the combinations of factors is produced by means of the process 13. Each managerial action is executed according to firmly defined or freely formable (innovative) procedures. The nationally established (by the state or by public entities) trade regulations or the universally valid instructions (such as laws and decrees) for active or passive conduct within the enterprise (internal) and on the market (external) are graphically represented by the process 13. The term definition of “external process” includes all rules (laws, decrees, etc.) and regulations (freely formable agreements) with the trading area and market participants outside the enterprise. The external processes also apply to the procedures in the exchange of information and products, which procedures are voluntarily defined by the market participants, contractually bound, or established in standards (universally valid e.g. EDIFACT, SEDAS, CCG norms, etc.). The internally developed know-how (patents, trademarks, and copyrights) as well as the rights and patents used by external market participants are likewise integrated by the process 13 into the performance process of the enterprise. The combinations of factors operating in the enterprise and the optional tasks to be executed by the management levels are summed up under the term “internal procedures” in the process 13. In order to control the combination of factors in the enterprise, systems are used for operational data

collection (BDE), for computer-integrated manufacturing (CIM), and for production planning and control (PPS). The organizational descriptions required for this and the technical integration of all production units into the information technology system (by means of interfaces) are defined in the process 13 by the integration element “internal procedures” and physically realized, as are the description of human intervention-based tasks, workstations, and operating sequences. The use and employment of production facilities 4 in each particular combination (in accordance with the technical development and the existing infrastructure) in the individual businesses and business units for the respective goods production are described or established by means of the process 13. All procedures and rules between the market participants and between the functional areas and functions in the enterprise are registered by the process 13 in a situation-based, i.e. real, manner. The higher the degree of graphic representation achieved, the lesser the information system-induced frictional losses between the market participants and divisions in the production process. The materials consumption in the goods production is detected by the software of the basic integration system, as the manpower 3 and production facilities 4 are registered by means of the addresses 10, articles 11, conditions 12, and processes 13.

The combination of the performance potential 1, the elementary factor 2, and the base element 9 in the companies, individual businesses, and business units, produces the goods offered on the markets, as shown in Fig. 3. The performance potential 1 of an enterprise must be viewed as given at the respective time it is considered. The improvement of performance, however, is the perpetual task of management. From this follows the need to optimize the employment of the individual performance factors. The technical progress and the international division of labor permit the management over time to change the combination of factors in the enterprise in order to increase competitiveness. The development of factor prices on the markets and consequently in enterprises is substantially responsible for the changes in factor combination structures. The interaction of factors, as a concatenation of the elementary factors 2 of human

operators 3, production facilities 4 (units, machines, real estate), material 5 (including raw materials, auxiliary materials, operating materials), accessible, available information 6, the control of this process through management of the optional activity 7 (optional factor 7), and the integration 8, according to the predetermined production function as an  
5 electronic data processing-based graphic representation in the functional areas of management and control through time management 14, inventory control/accounting, and finances 15 by means of the base element 9 with the addresses 10, articles 11, conditions 12, and processes 13, culminates in the enterprise in an information technology-guided goods production process/goods management process 16 (goods manufacturing) in the  
10 form of the manufactured products 17.

The combinations of the factors shown in Fig. 3 (in the goods production process/goods management process 16) demonstrate that the enterprise performance potential 1 (capacities of human operators 3, production facilities 4, and materials 5, accessible, available information 6) in cooperation with the performance of the factor of integration 8 by means of this base element 9, addresses 10 and articles 11, conditions, and processes 13, is graphically represented in process engineering and accounting terms. The outlays of labor input, production facilities use, and materials consumption, which flow into the goods production process/goods management process 16, can be determined  
15 in real time by means of the information technology system and can be defined division by division in the production process. The qualitative and physical progress of the individual operational sequences, machine capacities, and material consumption in the goods production process is to be directly allocated to the individual cost centers in each division. The integrated software of the basic integration system consequently assures that  
20 the expenditures involved in the production process are allocated to the cost center in real time and online and thus the "actual costs" of the individual goods can be transparently displayed at all times. This process of graphically representing the goods manufacturing in the information system should be constituted in accordance with branch-specific criteria. The enterprise is divided up into branch groups, branch types, and branch  
25

operations in accordance with configuring a branch-specialized software of the basic integration system for the user company.

Fig. 4 is a schematic depiction of the electronic data processing system for operations management, which graphically represents of a goods production process/goods management process 16 with heterogeneous individual businesses/business units 18 within the enterprise, which are comprised, for example, of the units: management, research and development, finance department, advertising department, quality assurance system, outgoing- and incoming goods, inventory management, human resources, and production, etc., which are partially connected by means of heterogeneous data connections 19 to associated parameter detection units and parameter control units for the management and control of goods production, which through their logical model, can be represented as a base element 9 by virtue of the fact that the performance potential 1 of the individual businesses/business units 18 is comprised of the elementary factors 2, such as human operators 3, production facilities 4, materials 5, accessible, available information 6, which function by means of an optional factor 7 with the integration 8, and the base element 9 can be comprised of at least two elements of the address 10, the article 11, the conditions 12, and the process 13, where the characteristic features of these elements can be used interchangeably with one another, by virtue of the fact that the data connections 19 associated with a goods production process/goods management process 16 are connected to a basic integration system 22 individually by means of a specific integration element 20 and/or are connected to the basic integration system 22 along with others by means of specific interfaces 21, where the basic integration system 22 is comprised of a software 23 and a known computer system 24, that this basic integration system 22, with the aid of the software 23, permits the graphic representation of this goods production process/goods management process 16 in real time, that with the aid of this software 23, there is an association of the base element 9 with the individual businesses/business units 18, that the base element 9 is operationally connected in real time to the associated parameter detection units and control units by means of the specific

integration element 20 and the specific data connections 19, that the entirety of the base elements 9 of this goods production process/goods management process 16 are sufficiently represented graphically in such a way that it is controlled and managed through instructions of an intelligent control system 25. The intelligent control system 25 is connected to the basic integration system 22 by means of a line (a). In the intelligent control system 25, data exist in real time in the form of data records, which are converted into signals and vice versa, are converted from signals into data records, that instructions for the goods production process/goods management process 16 are executed by it with a software by means of the computer 26, a software layer 27, and a connecting element 28, where the software layer 27 and the connecting element 28 with the internal software can be an integrated component of the computer system 24, and that the intelligent control system 25, by means of the computer 26, the software layer 27, and the connecting element 28, is operationally connected to the basic integration system 22, and the specific integration element 20 is operationally connected to the individual business/business unit 18 by means of the data connections 19 in such a way that the performance potential 1 of the individual business/business unit 18 is identified by means of elementary factors 2 and exists in the form of a data record in the intelligent control system 25 and for the profit-oriented and process-oriented management of the goods production process/goods management process 16, which is determined by the elementary factors 2 of manpower 3, production facilities 4, materials 5, and accessible, available information 6, and whose combination capacity is influenced by an optional factor 7 and an integration 8, makes a selection from among instructions for positively influencing the goods production process/goods management process 16 and this controls the goods production process/goods management process 16 by means of data records according to the previously mentioned data flow and operational connections.

According to Fig. 5, the electronic data processing system for operations management is embodied in several planes and modules, which are connected to one

another via firmly defined interfaces and can consequently be interchanged without influencing the other modules.

A presentation/interaction 29 serves as an interface for the human operator 3, receives inputs from this operator, and presents him with the results obtained. It communicates with an application 31 via a firmly defined interface I 30. The application 31 contains the management procedural logic and executes the actions requested by the human operator 3. To that end, it communicates via an interface II 32 with a data management system 33. The data management system 33 accesses an internal database 35 by means of an interface III 34 or accesses a remote (external) database 37 by means of an interface IV 36 and via this interface, supplies the application 31 with the data required for the processing or writes the data determined by the application 31 into the internal database 35 or into the external database 37.

The firmly defined interface I 30 permits a replacement of the presentation/interaction 29 module without influencing the other planes and modules. In this way, text presentations and graphic presentations can be exchanged with one another, without having to change the application 31. The fixed definition of the interface II 32 also permits the data management system to be replaced without repercussions on the other planes and modules. The interface I 29 to the human operator 3 and the type of data keeping can thus be changed without having to change the other components.

In order to integrate the units used in the production of goods and services, the application 31 addresses a high-level application interface 39 via an interface V 38. This is not production facility-specific, but supplies a master set of functions, which the application 31 can request from the units used for the production of goods and services. Via an interface VI 41, the high-level application interface 39 accesses a production facility-specific communication with production facilities 42, which the production facilities 4 control by means of an interface VII 43. The production facilities 4 can be any controllable units such as scales, scanners, stacking shelves, or tubular tracks. A control message manager 40 is situated as its own layer around the presentation/interaction 29, the application 31, the data management system 33, the high-level application interface

39, and the interfaces 30, 32, 34, 35, and 38. It receives messages from the various modules and interfaces and conveys them to the module addressed, which correspondingly processes the message.

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## Reference Numerals Used

1	performance potential
2	elementary factor
3	human operator
4	production facilities
5	material
6	accessible, available information
7	optional factor
8	integration
9	base element
10	address
11	article
12	condition
13	process
14	time management
15	inventory control/accounting and finances
16	goods production process/goods management process
17	product
18	individual business/business unit
19	data connection
20	specific integration element
21	specific interface
22	basic integration system
23	software
24	computer system
25	intelligent control system
26	computer
27	software layer

- 28 connecting element
- 29 presentation/interaction
- 30 interface I between presentation/interaction and application
- 31 application
- 32 interface II between application and data management system
- 33 data management system
- 34 interface III between data management system and internal database
- 35 internal database
- 36 interface IV between data management system and external database
- 37 external database
- 38 interface V between application and high-level application interface
- 39 high-level application interface
- 40 control message manager
- 41 interface VI between high-level application interface and the communication  
to production facilities
- 42 communication to production facilities
- 43 interface VII between the communication to production facilities and the  
production facilities
- a connection

## Claims

1. An electronic data processing system for operations management in which the entire management process is integrated into the electronic data processing system, which  
5 is comprised of

- the computer system (24),
  - an intelligent control system (25),
  - a goods production process/goods management process (16), and
  - a basic integration system (22), which is associated with the computer system (24)
- 10 and is connected by means of a connection (a) to the intelligent control system (25) and to the goods production process/goods management process (16) via a special interface (21), and which is comprised of a management software application (31) and a software (23), which safeguards the association of a base element (9) with individual  
15 businesses/business units (18), where the computer system (24) and the intelligent control system (25) have access to real-time data regarding the goods production process/goods management process (16), which data are directly present in the computer system (24) and exist in the form of data records in the intelligent control system (25) by means of the connection (a), which data records are converted into signals and vice versa, are  
20 converted from signals into data records, which, with instructions for the goods production process/goods management process (16) are executed by it with a software by means of the computer (26), by means of a software layer (27), and by means of a connecting element (28), where the software layer (27) and the connecting element (28) with the internal software can be an integrated component of the computer system (24), and that the intelligent control system (25), by means of the computer (26), the software  
25 layer (27), and the connecting element (28), is operationally connected to the basic integration system (22), and the specific integration element (20) is operationally connected to the individual business/business unit (18) by means of the data connections (19) in such a way that the performance potential (1) of the individual business/business unit (18) is identified by means of elementary factors (2), exists in the form of a data

record in the intelligent control system (25), and – for the profit-oriented and process-oriented management of the goods production process/goods management process (16), which is determined by the elementary factors (2) of manpower (3), production facilities (4), materials (5), and accessible, available information (6), and whose combination  
5 capacity is influenced by an optional factor (7) and an integration (8) – makes a selection from among instructions for positively influencing the goods production process/goods management process (16) and this controls the goods production process/goods management process (16) by means of data records according to the previously mentioned data flow and operational connections.

10 2. An electronic data processing system for operations management according to claim 1, characterized in that the electronic data processing system, which is incorporated company-wide, is networked by means of data connections (19).

15 3. An electronic data processing system for operations management according to claim 1 and claim 2, characterized in that through an electronic data processing-based integration of complex, heterogeneous individual businesses/business units (18) by means of specific interfaces (21), an integration of the communication and the standard software for presentation/interaction (29) by means of specific interfaces into the managerial  
20 software application (31), an online and real-time detection of managerial parameters takes place by means of operational data collection units, and by means of interfaces (34), (36), these parameters are organized as data, are stored and maintained in internal and external databases (35), (37), are handled by means of processes (13) of implemented business models, and are used as results to control the goods production process/goods  
25 management process (16).

4. An electronic data processing system for operations management according to claim 1 to claim 3, characterized in that the business model takes an integration (8) into consideration as an additional elementary factor (2).

5 5. An electronic data processing system for operations management according to claim 1 to claim 4, characterized in that the managerial, heterogeneous individual businesses/business units (18) are each represented in an information technology-based manner as base elements (9) through information technology by means of their logical model of integration (8).

10 6. An electronic data processing system for operations management according to claim 1 to claim 5, characterized in that company-wide, the base elements (9) are uniformly limited to a minimal number of elements, as a result of which the base elements (9) assure a nonredundant graphic representation of the managerial parameters of the integration (8) of the goods production process/goods management process (16) in the respective business units (18).

15 7. An electronic data processing system for operations management according to claim 1 to claim 6, characterized in that company-wide, the number of processes (13) of the implemented business models is uniformly reduced to the elementary, fundamental processes among and within the elements of the base elements (9), which assures a minimal number of nonredundant processes (13).

20 8. An electronic data processing system for operations management according to claim 1 to claim 7, characterized in that company-wide, the specific interfaces I, II, III, IV, V, VI, VII (30), (32), (34), (36), (38), (41), (43) of the electronic data processing system are uniformly constituted by a system-independent modular shell structure.

25 9. An electronic data processing system for operations management according to claim 1 to claim 8, characterized in that the base element (9) contains precisely four elements, where:

- the addresses (10) give a uniform, company-wide graphic representation of all internal and external, legal and natural persons and entities
- the articles (11) do so for all material assets,
- the conditions (12) do so for all parameters affecting price determination, and
- 5 • the processes (13) do so for all possible connections among and within the elements.

10. An electronic data processing system for operations management according to claim 9, characterized in that the addresses (10) element uniformly includes: representatives, suppliers, clients, divisions, personnel, branches, headquarters, ....

11. An electronic data processing system for operations management according to claim 9, characterized in that articles (11) element uniformly includes: materials, operating materials, auxiliary materials, merchandise, retail articles, intermediate goods, equipment, ....

12. An electronic data processing system for operations management according to claim 9, characterized in that the conditions (12) element uniformly includes: prices, discounts, surcharges, calculatory costs, rebates, ....

13. An electronic data processing system for operations management according to claim 9, characterized in that the element processes (13) uniformly includes the managerial interactions within the addresses (10) (e.g. client A and representative B), within the articles (11) (e.g. formulas), within the conditions (12) (e.g. priority in the condition calculations), between addresses (10) and articles (11) (e.g. customer orders), between addresses (10) and conditions (12) (e.g. bonuses), and between articles (11) and conditions (12) (e.g. volume discounts).

14. An electronic data processing system for operations management according to claim 9, characterized in that for connection between a first and a second interface layer,

the individual modules of the shell structure of the interfaces I, II, III, IV, V, VI, VII (30), (32), (34), (36), (38), (41), (43) each have two interface layer-specific components, which are connected via an internal interface layer that is uniform company-wide, as a result of which in a required adaptation of a module of the interface to a changed interface layer,  
5 only one component has to be adapted.

15. An electronic data processing system for operations management according to claim 9, characterized in that a control message manager (40) as a separate layer encompasses the presentation/interaction (29), the application (31), the data management system (33), the high-level application interface (39), and the interfaces I, II, III, IV, V, VI, VII (30), (32), (34), (36), (38), (41), and (43), and this control message manager (40) receives messages from the various modules and interfaces and forwards each of them to the addressed module, which correspondingly processes the message.

15 FIVE PAGES OF DRAWINGS ATTACHED!

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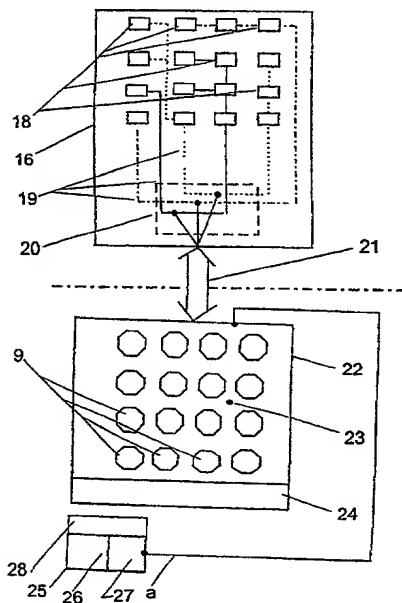
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(54) Title: ELECTRONIC DATA PROCESSING SYSTEM FOR OPERATIONS MANAGEMENT

(54) Bezeichnung: EDV-SYSTEM ZUR UNTERNEHMENSFÜHRUNG



(57) Abstract: The invention relates to an electronic data processing system for operations management. The aim of the invention is to develop an electronic data processing system for operations management which depicts, in a redundancy-free manner, the economic facts, findings and courses in the individual businesses, and secures and controls the electronic data processing technical linking of all aggregates used for producing goods while integrating communications technology. The electronic data processing system is comprised of a computer system (24), of an intelligent control system (25), of a goods preparation process/goods management process (16) and of a base integration system (22), which is assigned to said computer system (24) and is connected to the intelligent control system (25) via a connection (a) and is connected to the goods preparation process/goods management process (16) via a special interface (21). Said base integration system (22) is comprised of a business management software application (31) and of a software (23) which ensures the assignment of a base element (9) to individual businesses/economic units (18). Information concerning the goods preparation process/goods management process (16) is presented to the computer system (24) and to the intelligent control system (25) in real time. Said information is provided directly to the computer system (24) and is provided, via the connection (a), to the intelligent control system in the form of data records which are converted into signals and conversely from signals into data records that is carried out with instructions for the goods preparation process/goods management process (16) from the same by the computer (26), by a software layer (27) and by a connection element (28) with a software. The software layer (27) and the connection element (28) can be a component of the computer system (24) that is

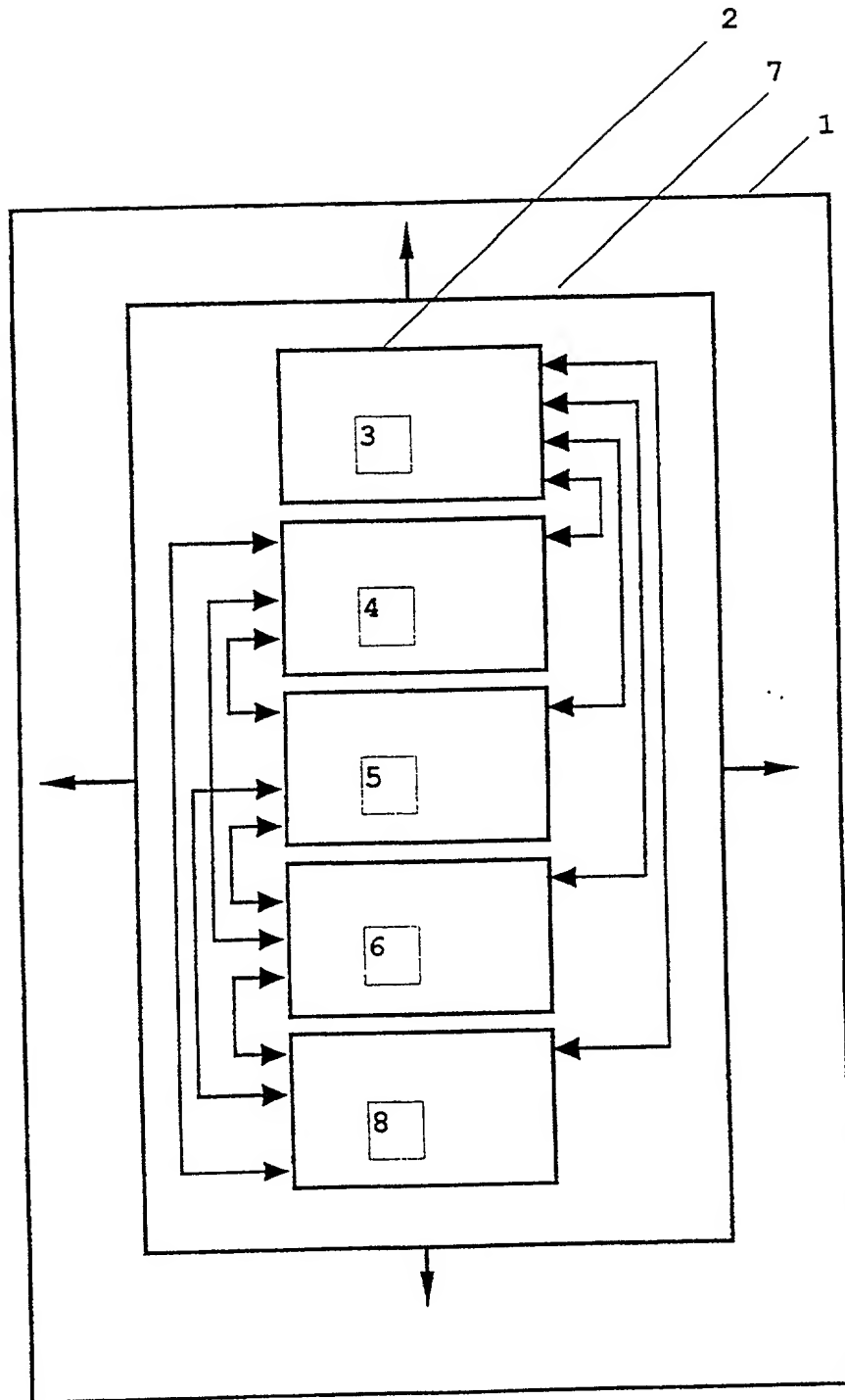
integrated with the internal software, and the intelligent control system (25) is interactively connected, by means of the computer (26), the software layer (27) and the connection element (28) to the base integration system (22) and to the specific integration element (20) via the data connections (19) with the individual business/economic unit (18) in such a way that the output potential (1) of the individual business/economic unit (18) is identified by element factors (2) and is provided as a data record to the intelligent control system (25). A selection of instructions for positively influencing the goods preparation process/goods management process (16) is made for the profit-oriented and process-oriented business of the goods preparation process/goods management process (16) which is determined by the elementary factors (2), human labor (3), resources (4), materials (5), and retrievable and available information (6) and whose capability of combining is influenced by a dispositive factor (7) and by an integration (8), and this selection, using a data record, controls the goods preparation process/goods management process (16) according to the aforementioned data flow and interactive connections.

[Fortsetzung auf der nächsten Seite]



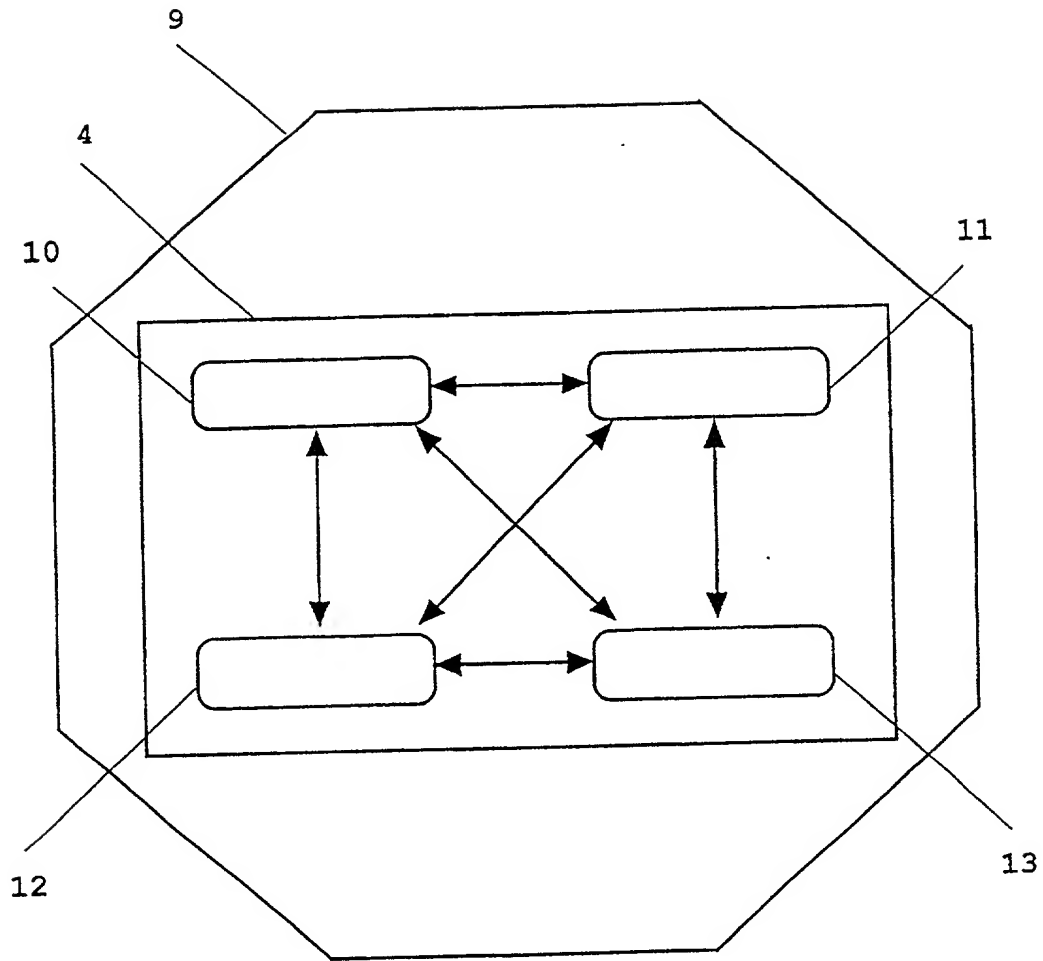
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Figur 1



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Figur 2



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Figur 3

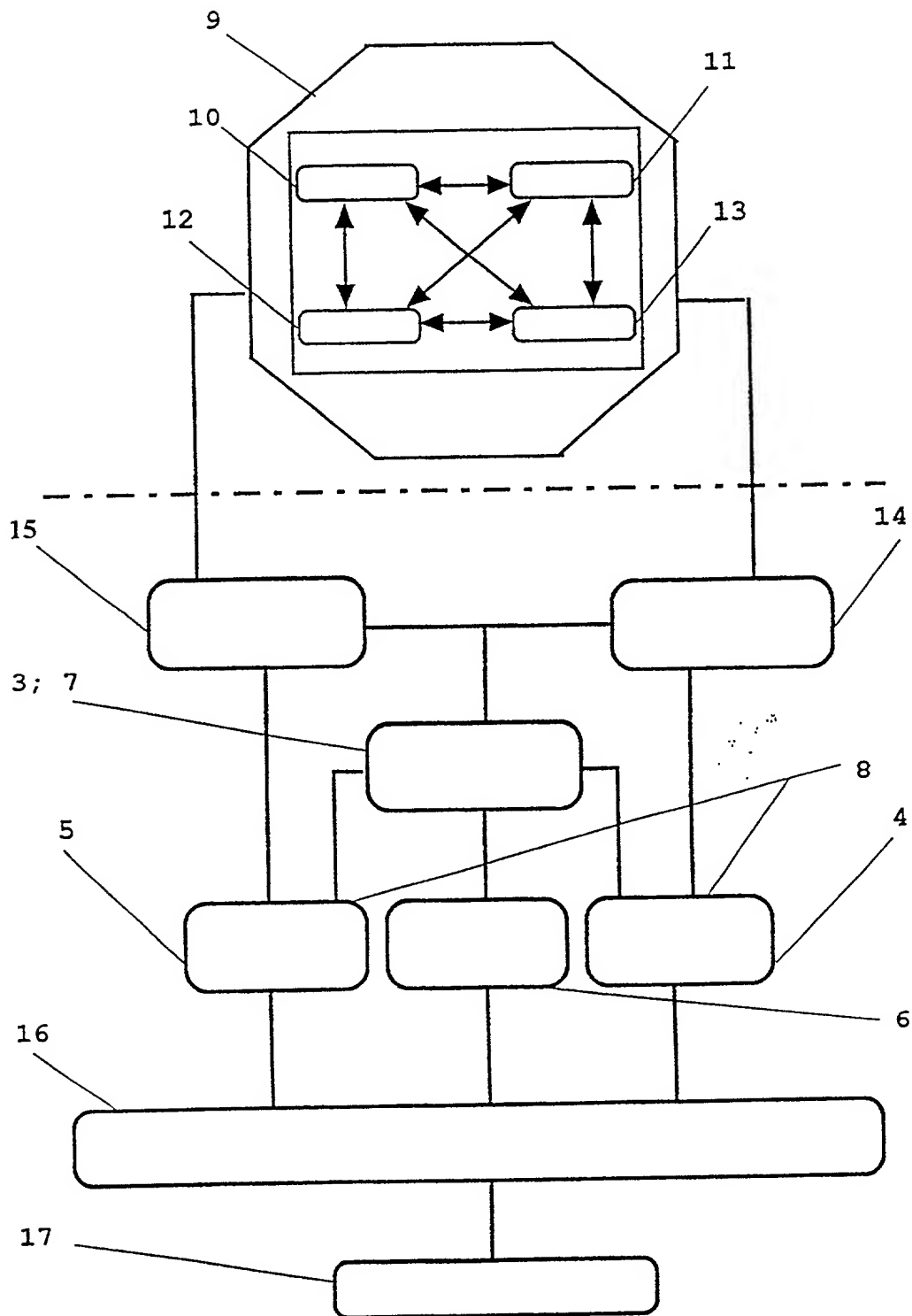
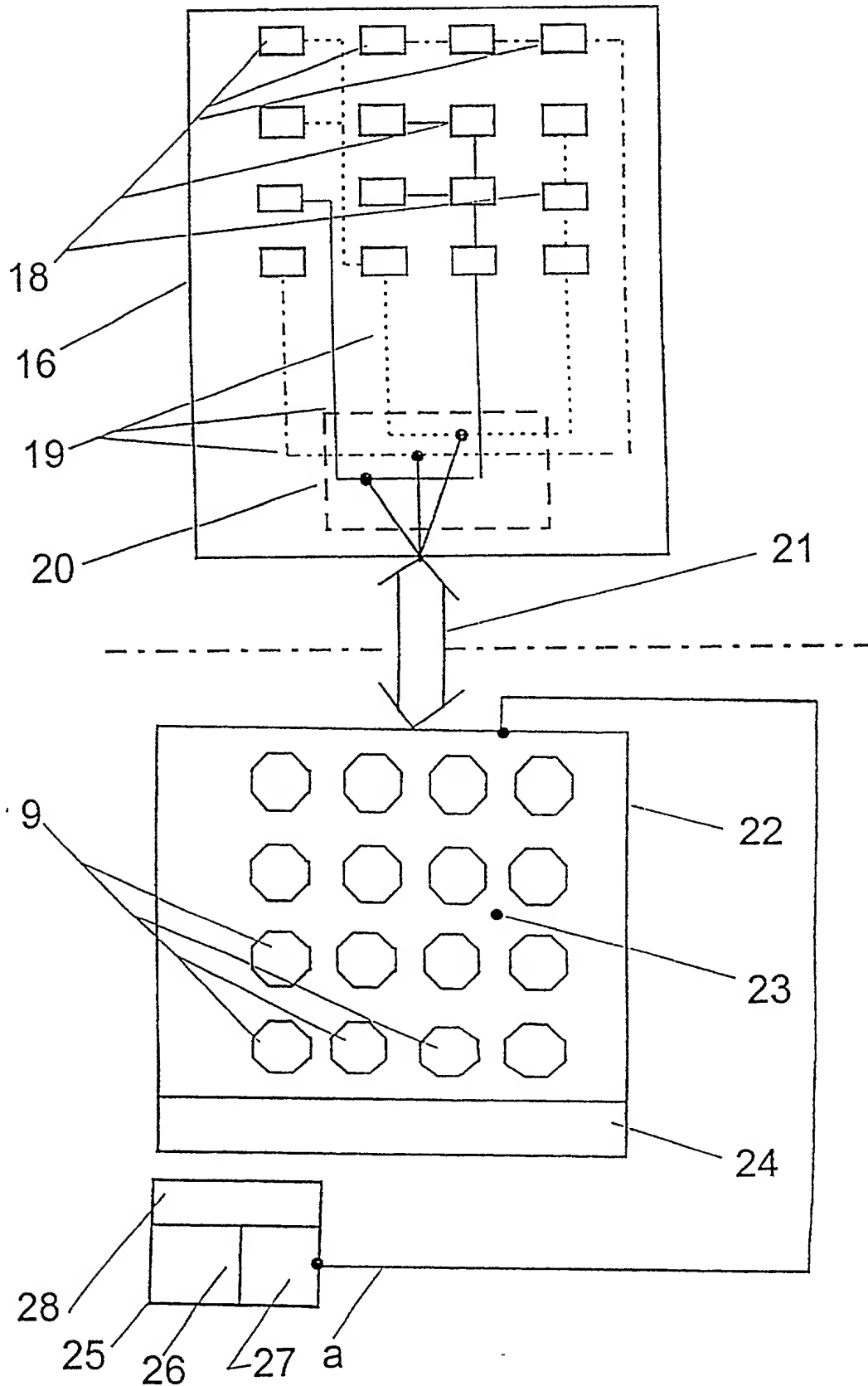
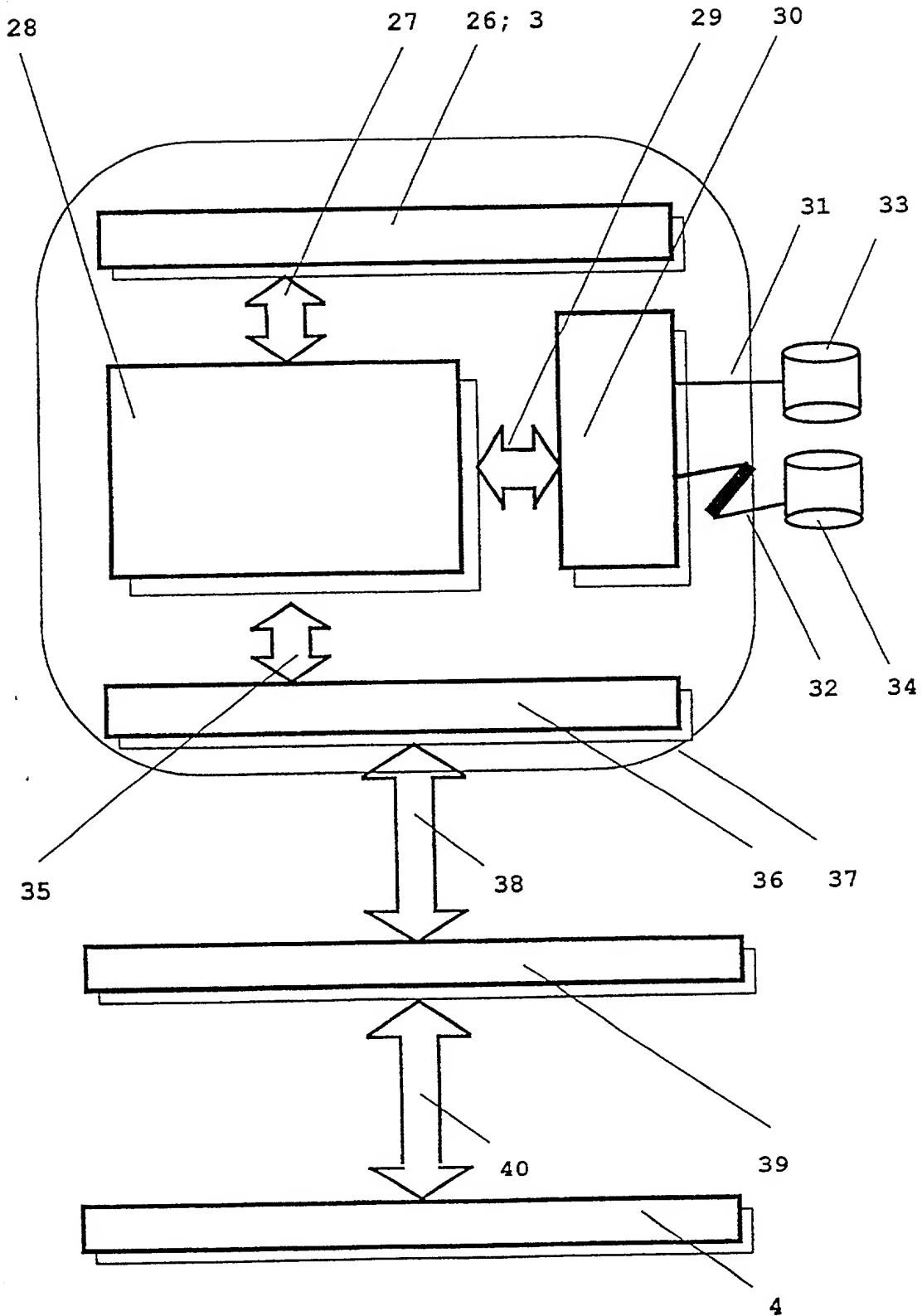


Fig. 4

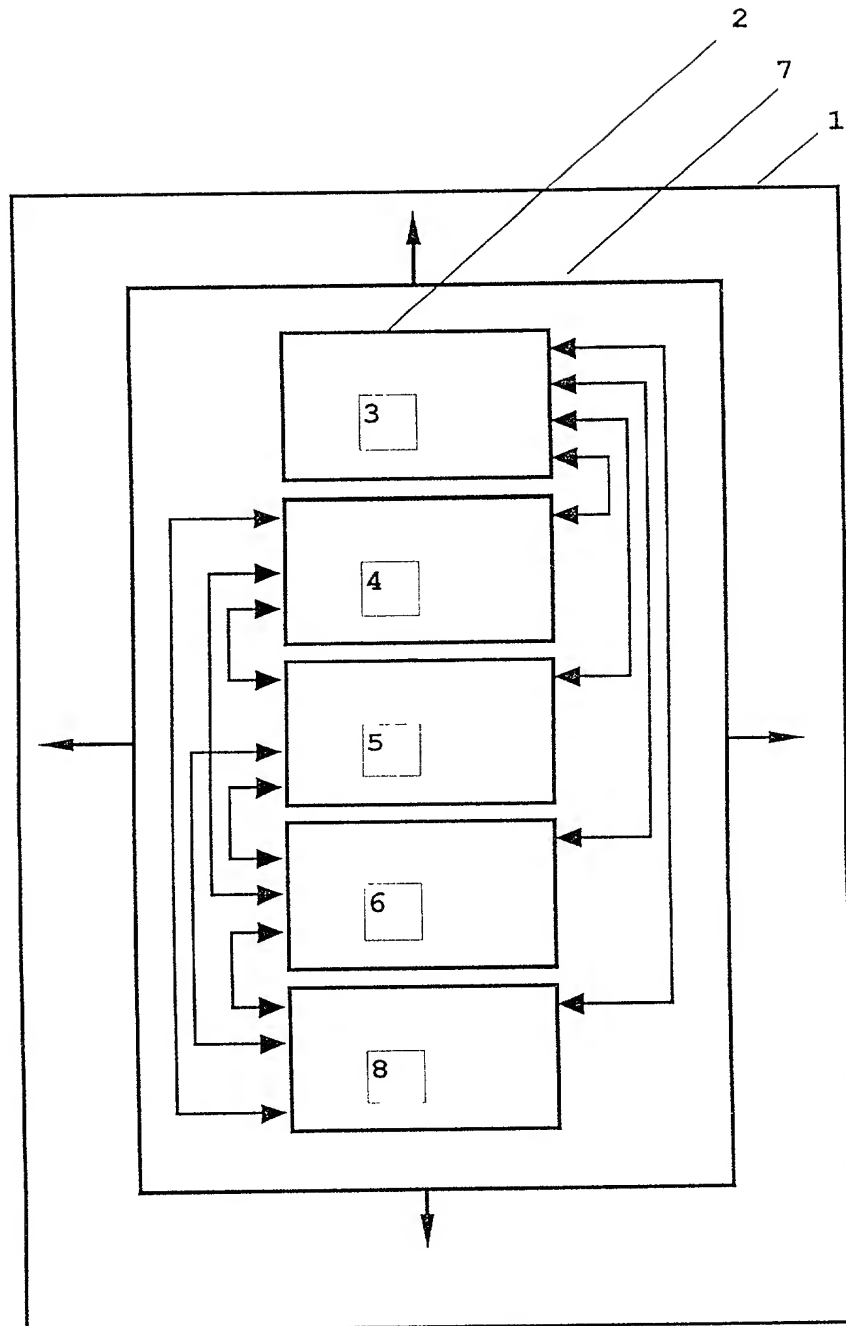


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Figur 5

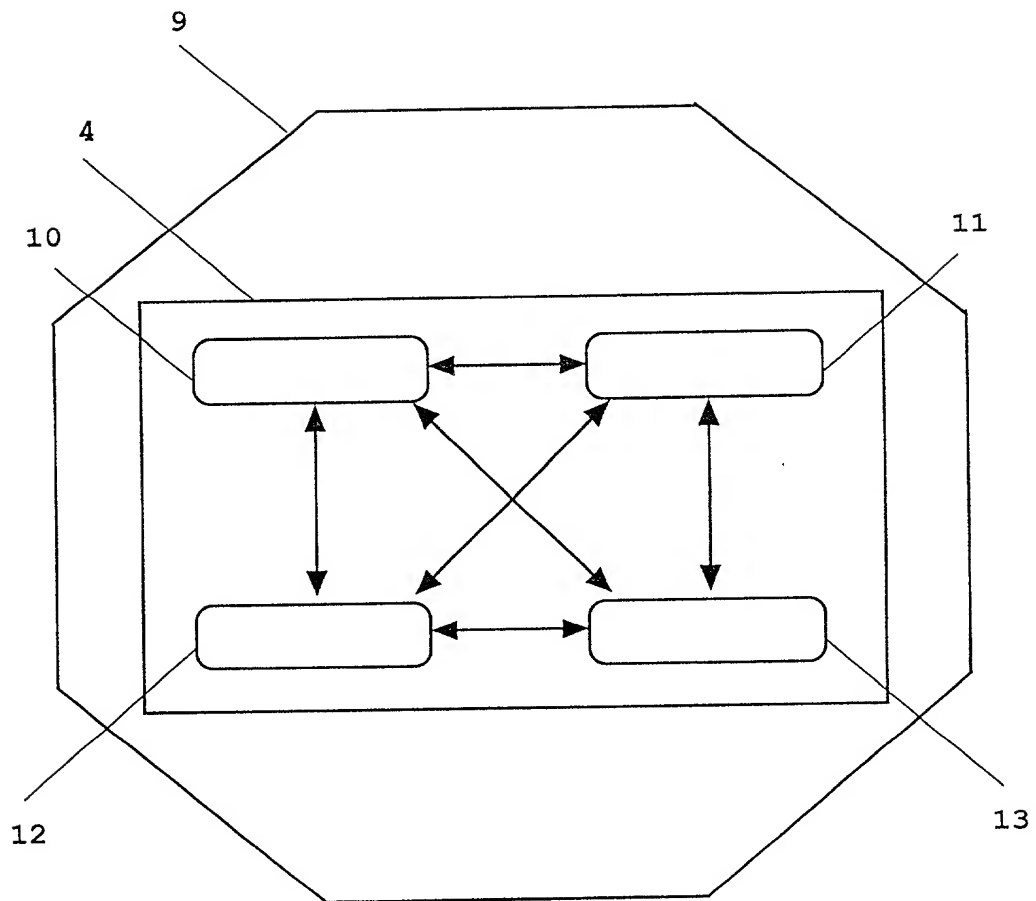


Figur 1



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Figur 2



Figur 3

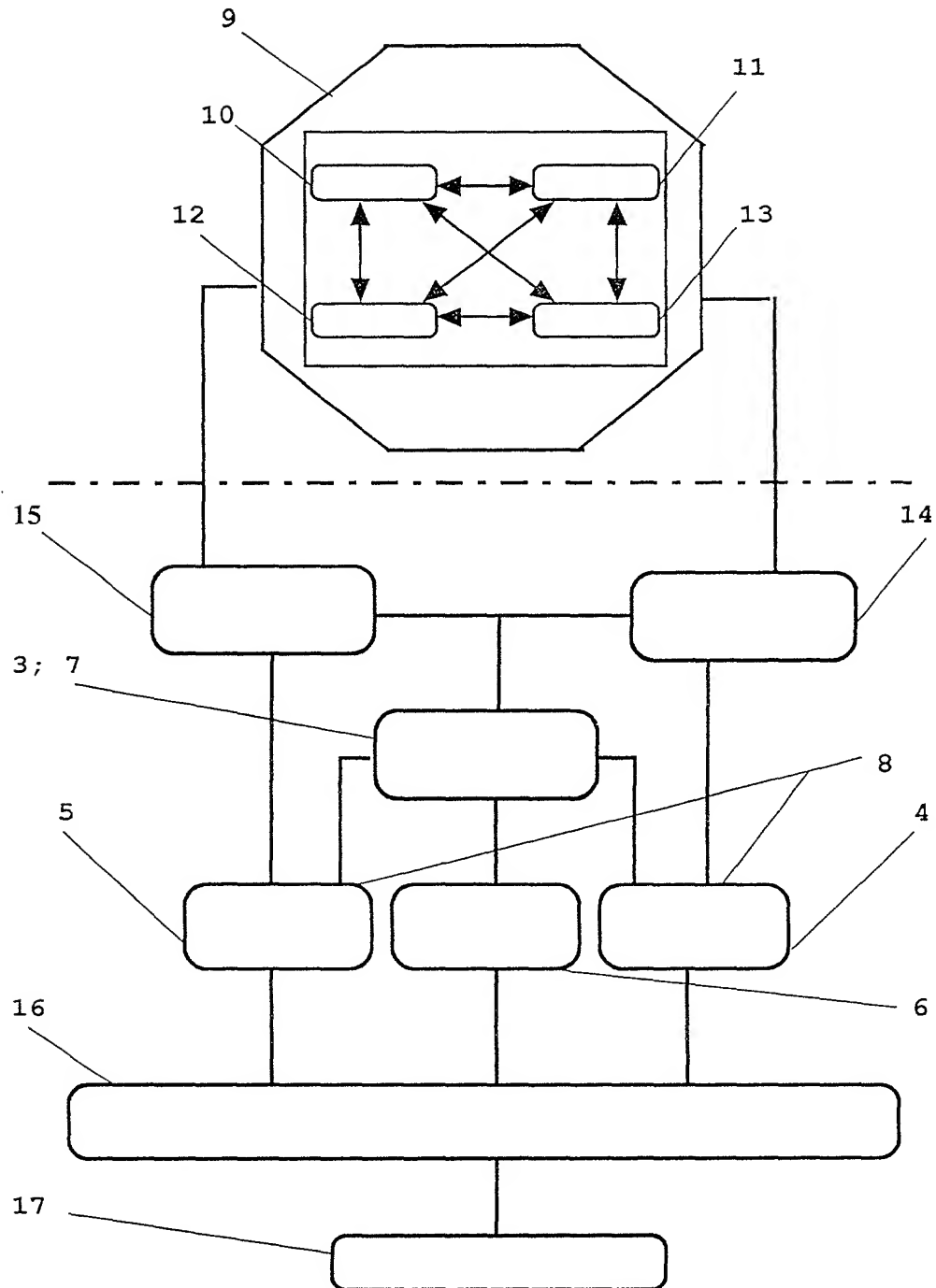
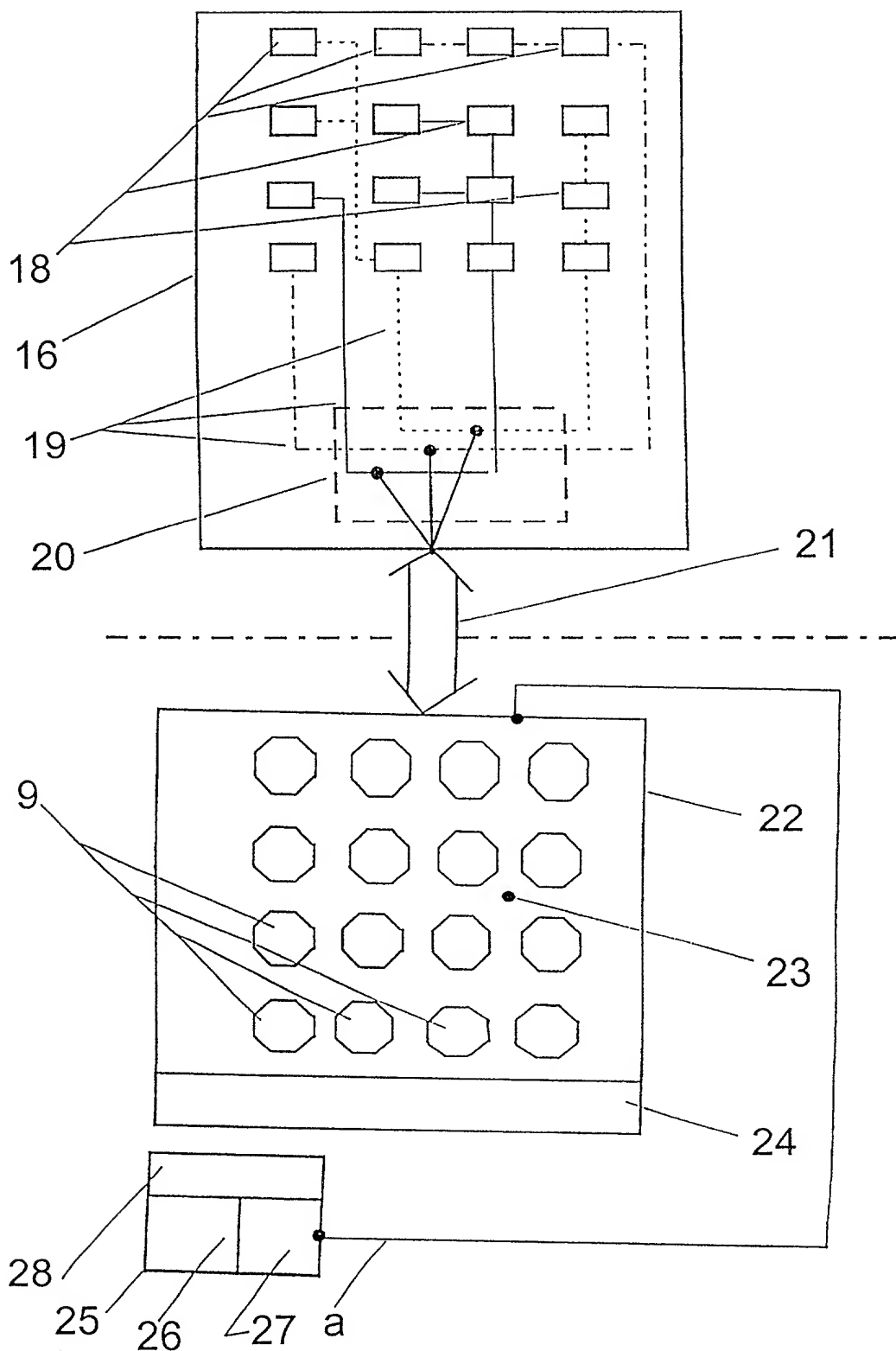
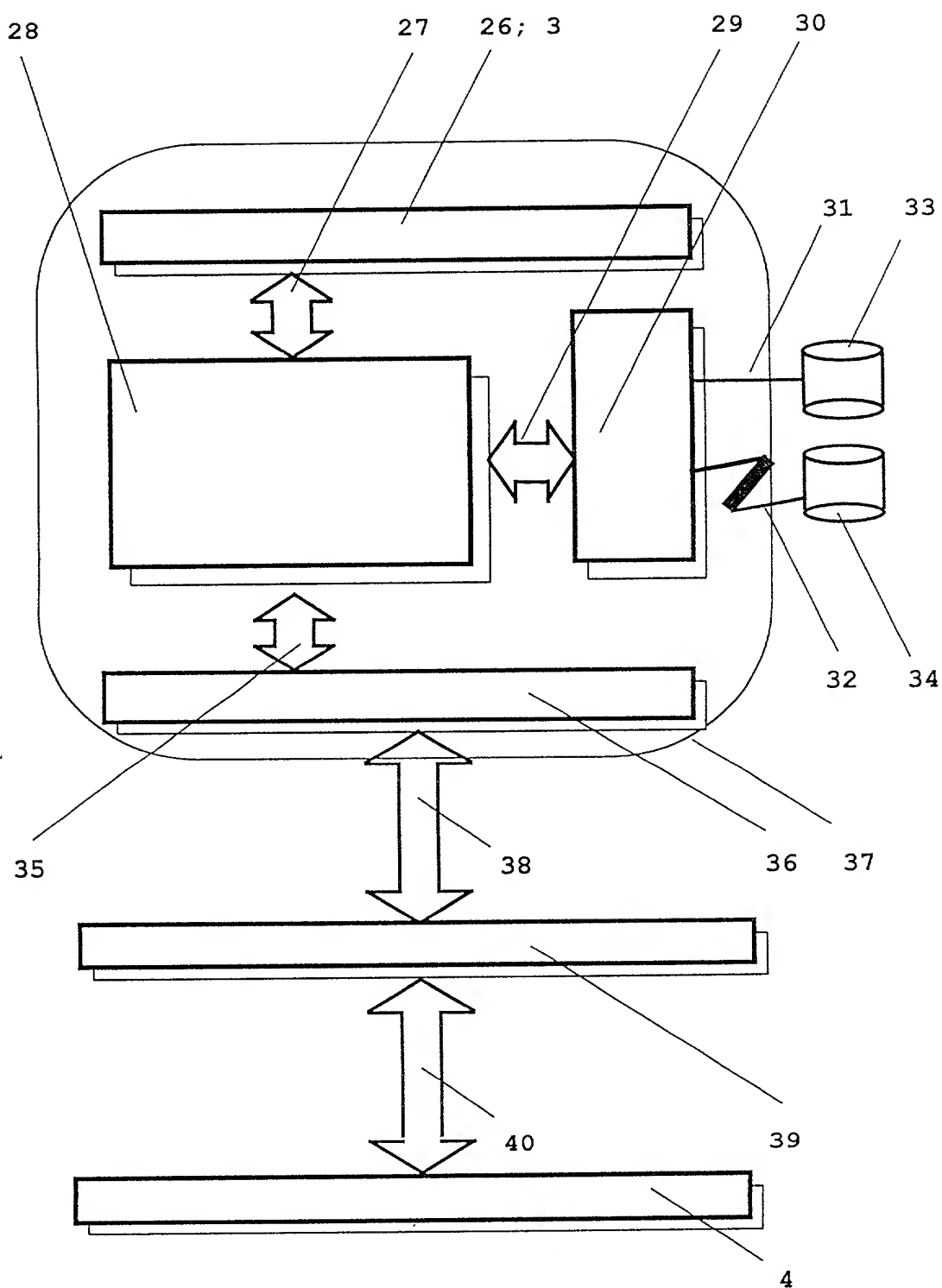




Fig. 4



Figur 5



DECLARATION AND POWER OF ATTORNEY FOR NATIONAL STAGE OF PCT PATENT APPLICATION

As a below-named inventor, I hereby declare that:  
Dr. Peter Schimitzek

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **Electronic data processing system for operations management**  
the specification of which was filed as PCT International

Application number PCT/DE00/02192 on June 29, 2000

I hereby state that I believe the named inventor or inventors in this Declaration to be the original and first inventor or inventors of the subject matter which is claimed and for which a patent is sought.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose all information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365 (b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior foreign application(s):			Priority claimed:	
299 15 584.6	Germany	September 04, 1999	<u>X</u>	
(Number)	(Country)	(Date filed)	Yes	No
(Number)	(Country)	(Date filed)	Yes	No



As a named inventor, I hereby appoint the following attorney to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such wilful false statement may jeopardize the validity of the application or any patent issued thereon.

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Signature:	Date:	Residence and Full Postal Address:
Full Name of Sixth Inventor:	Citizenship:	
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Signature:	Date:	Residence and Full Postal Address:
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